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Education, knowledge, and symbolic form

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ABSTRACT

This article aims to introduce Ernst Cassirer, and his philosophy of symbolic form, to education studies, and, in doing so, to challenge the widespread but deeply flawed views of knowledge and so-called knowledge-based education that have shaped recent education policy in England. After sketching the current educational landscape, and then some of the main lines of flight in Cassirer's work, time is given to a comparison with Heidegger—a more familiar figure by far in Anglophone philosophy than Cassirer, and who contributed to the displacement of Cassirer—in order to illustrate more clearly Cassirer's original contribution, in particular to the relationship between knowledge and time. Cassirer's view of knowledge stands in marked and critical contrast to that which has shaped recent educational reform in England, as he sees knowledge as a productive and expressive matter, and repudiates what I call the 'building-blocks' picture of knowledge and the hierarchisation of subject areas.

KEYWORDS

Ernst Cassirer; education (in England; mathematics; English literature); Martin Heidegger; knowledge; symbolic form

AQ1

Ernst Cassirer—at one time among Germany's most prominent philosophers, and the last and leading light of Marburg neo-Kantianism—occupies an odd position in Anglophone philosophy: hardly unknown, yet afforded relatively scant attention in the last half-century or so.[1] Of Jewish descent, he was forced to leave Germany in 1933. His arrival in America in 1941—where, after nearly a decade of moving between England and Sweden, he stayed until his sudden death in 1945—prompted a frisson of interest in his work. Alongside two volumes—*An Essay on Man* (1945) and *The Myth of the State* (1946)—which Cassirer wrote in English, a number of his works appeared in English translation, including, in 1955 and 1957, the three completed volumes of his central work *The Philosophy of Symbolic Forms* (originally published in 1923, 1925, and 1929). Since then, periodic interest in his work has been sufficient for the identification of 'Cassirer studies'[2] yet he remains a marginal figure when compared to Heidegger and the volume of Heidegger scholarship, mention of which is not idle: in much of the biographical and historical literature on Cassirer, Heidegger plays an important role not only in the displacement of neo-Kantianism generally, but of Cassirer especially.[3]

The issue to which Cassirer would return time and again was, in his words, 'the problem of knowledge' (PSF3, p. xiii); in what follows, I hope to add to the small body of work that engages with Cassirer in relation to educational matters,[4] and, in doing so, to bring Cassirer's

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work to bear on what I see as a 'problem of knowledge' particular to educational discourse and policy in England. Here, my comments are focussed on secondary education—the context in which I continue to work—and my targets are the proponents—most active in the related public spheres of political, professional, and online debate—of a so-called 'knowledge-based education'. My intention in this piece is to think through the philosophical implications of—in a disciplinary sense—non-philosophical comment and to offer a philosophical response; for just as Dennett believes of scientific talk, so do I of talk—in educational circles especially—of knowledge: though it might go without philosophical examination, it cannot swing philosophy-free (see Dennett, 1995, p. 21). When a shadow (and future) Secretary of State for Education is able to extol education's 'emancipatory, liberating, value', and to profess his belief that 'education allows individuals to become authors of their own life stories' (Gove, 2009, p. 3), he is making philosophical points; or, if one prefers, political points that are philosophically freighted. Similarly, the talk of knowledge that is examined below cannot but be philosophically burdened. Cassirer's philosophy offers a view of knowledge markedly different to that which currently dominates English educational policy. It is one that takes seriously and explores systematically the idea that knowledge consists not in copying the way the world 'just is', but in giving original, objective form to our understandings of the world; and one that also takes seriously the role of knowledge and education alike in 'the process of the liberation of the human mind'.[5]

I begin with a sketch of an English secondary educational landscape that has been recently reshaped in the name of knowledge—'knowledge' mobilised in opposition to supposedly 'contentless' skills. I then offer a sketch of Cassirer's philosophy of symbolic forms, after which I pick up the comparison with Heidegger. Finally, in the conclusion, I return to educational matters, reading recent developments and debates in English and mathematics education through a Cassirean lens.

The educational landscape: knowledge-based education, the 'building-blocks' picture, and subject hierarchy

In recent years, a powerful collective voice—one that has directly shaped England's educational policy and public discourse on education—has emerged, arguing that 'we'—the education system, schools, teachers—must stop teaching contentless or 'joyless' skills, and start teaching knowledge proper; facts.[6] Yet this demand—which betokens a residual and felt, *not* systematic, positivism—misunderstands just what is at stake when we speak of knowledge. The back-to-facts movement variously takes for granted or tries to articulate a 'building-blocks' picture of knowledge, and attempts to model knowledge on something like the mathematical axiom or scientific theorem, themselves misconstrued as encoding basic absolute truths—as *representing* or copying *only*, rather than as *presenting* (making, producing, constituting). Let us consider a few examples taken from this collective voice.

'Joyless skills' is Schools Minister Nick Gibb's coinage, a response to what he sees as the characterisation, especially 'fashionable' during the 1960s, of 'the accumulation of knowledge as a joyless anachronism: rote learning of unconnected facts, inflicted upon bored and unwilling pupils. School curricula were increasingly rewritten to focus not upon subject content, but upon skills and dispositions' (Gibb, 2016a). 'It always saddens me', Gibb continues, 'to see thrilling content of education, be it timeless literature, scientific wonders, or great historical events, being relegated to a backseat, so that these comparatively joyless "skills" and

"processes" can come to the fore'. Reporting on Gibb's comments, made during a speech given at Durham University, the *Independent*'s political editor noted that Gibb's 'comments [...] echo the complaints of the former Education Secretary Michael Gove' (Wright, 2016). Such an echo is hardly surprising, however, considering Gibb's role in shaping Gove's educational policy (see Gibb, 2015). In fact, given that it was apparently Gibb who introduced Gove to the work of E.D. Hirsch and, in so doing, helped put intellectual flesh on ideological bones, Gibb is as much the source as the echo of the noise here.[7]

A strong line of continuity runs from Gibb to the work of the prominent educational commentator Daisy Christodoulou, whose various journalistic articles, blogs, and first book, *The Seven Myths about Education*—endorsed by Dylan Wiliam and E.D. Hirsch among others—bridge academic and more generalist readerships. Christodoulou's book, a more forensic version of the 'skills movement' critique found in Gibb's Durham address, maintains what she labels the false dichotomising of knowledge and skills in 'postmodernist' educationalist discourse, in order to defend a building-blocks picture of a supposedly 'knowledge-based' education.[8] Defending knowledge against curricula that prescribe 'skills, experiences and certain methods, rather than content' (2014, p. 14), Christodoulou gives the following examples:

> If I present you with 16 digits that you have to look at for five seconds and then try to reproduce, you will probably fail [...] But if I present you with the following 16 letters [*the cat is on the mat*] for five seconds, you will probably be able to produce them all exactly [...] This is because you have been able to chunk the 16 letters into individual and meaningful words, and then into one individual phrase or sentence. That chunking is dependent on your background knowledge, stored in your long-term memory, of the way that letters form words, the meaning of each individual word and the typical structure of a sentence.
>
> We can also store rules or processes in long-term memory. These help us to know how to solve a problem. [...] We know that the [process of long multiplication]. Pupils who have not committed the times tables to memory cannot solve a problem like that mentally, even if they understand conceptually how multiplication works. (2014, pp. 18–19)

Having drawn a line between skills and methods on the one hand, content and knowledge on the other, here Christodoulou celebrates both rote learning of a canon of propositions—recitation of the times tables, or, indeed, of the rules of multiplication; acts in principle no different to recitation of a mnemonic for the colours of the rainbow or the order of notes on a guitar—*and* the process mastery of which she appears to be suspicious—understanding of, and ability to carry out, processes of multiplication or the chunking of written letters and words. What Christodoulou attempts to separate along the axes of skills and knowledge is in fact a matter of relative expertise. A novice reader may need to recite the general phonetic principles or simply rehearse grapheme–phoneme correspondences (I see the word *cat* and say to myself 'k-a-t'); the expert will not. Generally she will read automatically (though she may have to 'sound out' unfamiliar words). The same holds for the solving of mathematical problems with varying degrees of expertise, as it does for musical or sporting performance. Christodoulou's argument fails because it loses the differences between semantic content of a sentence, an individual's cognitive-linguistic competence, and the cognitive processes underwriting linguistic competency. There is apparently no difference between knowing *how* to sound out a written sentence, understanding what that sentence says, knowing *that* such-and-such is the case, or being able to put such-and-such into propositional form; yet such differences are surely crucial to a theoretically inflected account of knowledge, education, and learning.[9]

Elsewhere, one finds sustained opposition of the so-called 'STEM' and arts–humanities subjects—and, concomitantly, a felt though rarely explicated distinction between knowledge and skills—in many public statements on education. Here we could cite the pronouncements of former Education Secretary Gove, who, quoting Sir Michael Wilshaw, warned while he was still in shadow cabinet that 'where skills are seen as a substitute for knowledge, outcomes will deteriorate' (Gove, 2009, p. 15); or we might turn to Gove's immediate successor Nicky Morgan, who, at the launch of the government's Your Life campaign, had this to say:

> Even a decade ago, young people were told that maths and the sciences were simply the subjects you took if you wanted to go into a mathematical or scientific career, if you wanted to be a doctor, or a pharmacist, or an engineer.
>
> But if you wanted to do something different, or even if you didn't know what you wanted to do […] then the arts and humanities were what you chose. Because they were useful for all kinds of jobs.
>
> Of course now we know that couldn't be further from the truth, that the subjects that keep young people's options open and unlock doors to all sorts of careers are the STEM subjects […].
>
> The skills gained from studying these subjects come in useful in almost any job you could care to name […]. (Morgan, 2014)

Reading Gibb, Christodoulou, and Morgan alongside one another, one cannot fail to notice the decidedly muddled talk (which I believe must be taken seriously—both the muddle and the talk) of knowledge and skills. Notice Gibb's derogation of 'skills' in the context of a talk focussed on the centrality of knowledge to a 'good' education, on the increased 'academic rigour [of] English state schooling' brought about, we are told, by government since 2010. Gibb claims that 'elevating knowledge', so that it might 'become a central component of a good school education', has been 'central' to the government's 'mission' (Gibb, 2016a). With Morgan, by contrast, we find skills extolled. The context of Morgan's speech, however, is markedly different. The aim of the Your Life campaign is to encourage more students to take post-GCSE professional qualifications in maths and physics; accordingly, the language of career-paths and -progression, as well as the promise of handsome remuneration, works hand in glove with that of skills, but demonstrably *not* knowledge: 'knowledge' occurs once in the published version of Morgan's speech; it is not used at all on any of the main pages of the Your Life website, while 'skills' occurs frequently throughout.

The examples of Gibb, Christodoulou, and Morgan are, I think, indicative of widespread habits of thought, speech, and word-association: we speak and think of *knowledge* in tandem with 'traditional' *academic study*, skills with so-called 'vocational' *training*.[10] Wherever knowledge and skills are invoked in conjunction, they are implicitly held as being connected yet distinct;[11] and where we find this, all too often we find the terms co-opted to highly politicised yet—as is seen above—inconsistent discourses of utility and values. My point here is not to bolster the knowledge/skills opposition by championing skills over knowledge, but simply to show that this opposition is inconsistently invoked—a mechanism of political and rhetorical exigency—and to suggest that it is ultimately inutile, both in matters of educational theory and curriculum design.

This, then, is the scene into which we ask Cassirer to step. First, it is necessary to outline some of the lines of flight in his work. His view of knowledge—its architectonic; its very possibility—stands, we will find, in stark contrast to that drawn above.

Cassirer's philosophy of symbolic forms

Though Cassirer has often been viewed as 'follow[ing] the traditions of the Marburg neo-Kantian school' (Verene in Cassirer, 1979), from the beginning of *Symbolic Forms* he announces a departure,[12] declaring that 'the critique of reason becomes the critique of culture' (PSF1, p. 80). Kantian 'epistemology, with its traditional form and limitations, does not provide an adequate methodological basis for the cultural sciences. It seemed to me,' he continues,

> that before this inadequacy could be made good, the whole program of epistemology would have to be broadened. Instead of investigating only the general premises of scientific *cognition* of the world, it would also have to differentiate the various fundamental forms of man's 'understanding' of the world and apprehend each one of them as sharply as possible in its specific direction and characteristic spiritual form. (PSF1, p. 69)

Cassirer's realisation that humankind is, as he puts it in *An Essay on Man* (EM, p. 26), essentially an '*animal symbolicum*' arose from a prior insight that the object of cognition envisaged by natural science is not the only form of objective knowledge we have of the world; 'the life of human spirit as a whole,' he writes, 'knows other forms' (PSF1, pp. 77–78). 'None of these forms can simply be reduced to, or derived from, the others,' and yet each distinctive form has a 'decisive characteristic in common with [scientific] cognition: it does not merely copy but rather embodies an original, formative power' (PSF1, p. 78). Such knowledge can properly be called objective because, in its various permutations, it objectifies the world of perception.

Like the fingers of the hand with which we grasp at worldly objects, the symbolic forms are interconnected but independent outgrowths of a single, unified, *Geist*, the essence of which is to transcend itself by means of its symbolising activities. Thus, Cassirer couples Kant's Copernican Revolution with a fundamental formal pluralism; in setting about the task of a philosophy of human culture, he specifies language, myth, religion, art, and science (and, in the *Essay*, history [EM, ch. X]) as the fundamental symbolic forms. *The Philosophy of Symbolic Forms* is both a critical-philosophical history of the development and articulation of these forms, and an original contribution to them. For Cassirer, knowledge does not copy nature, it produces, expresses, formalises. Indeed, what we call 'nature' is itself a production of human cultural labour, which emerges differently in mythic, artistic, and scientific thought.

Cassirer, Heidegger, temporality

Having briefly outlined the general thrust of *The Philosophy of Symbolic Forms*, let us consider the distinction of Cassirer's work through a comparison with Heidegger, a significant figure in general and educational philosophy alike. The so-called 'Davos Dispute'—the meeting in 1929 between Cassirer and Heidegger at the annual Davos colloquium—has been read as a signal moment in the history of Western philosophy, marking for some commentators a decisive moment in philosophy's continental and analytic branching.[13] In this story, the mild and old-fashioned Cassirer is overshadowed by Heidegger, the dramatic iconoclast who sounds the final knell for the scientific rationalism and logical idealism associated with Kant and Marburg neo-Kantianism. While there is some truth to this, Cassirer's philosophy offers an account that is not simply absorbed or neutralised by *Being and Time*, and which arguably anticipates the movement of Heidegger's thought after *die Kehre*.

As noted above, three volumes of *The Philosophy of Symbolic Forms* had, by the time of the Davos meeting, been completed (though the third, finished in 1927, would not be published for several months) and a fourth begun; *Being and Time*, completed in 1926, had been published a little over two years earlier. In *The Phenomenology of Knowledge* (volume III of *Symbolic Forms*) we find five footnotes referring to Heidegger's masterwork.[14] We also find in *Being and Time* a footnote dedicated to Cassirer's second volume of *Symbolic Forms*, subtitled *Language* (Heidegger, 1927, p. 490, n. xi). For Heidegger, Cassirer's 'anthropological' philosophy is fine as an 'ontic' account of Dasein—one that is syncretistic and operates *within* such discursive realms as anthropology, history, and so on—but fails to penetrate culture's mediating (and inauthenticating) layers to Dasein's ontological essence, to the very being of non-thematised, pre-theorised Being. Elsewhere, in a review of volume II of *Symbolic Forms*, Heidegger raises much the same objection, but proposes that a recognition of Dasein's constitutive *Geworfenheit* ('thrownness') is all that is needed to take this primordial step (see Friedman, 2000, pp. 125–126).

Cassirer, for his part, does not dismiss Heidegger's analytic of Dasein. However, on the issue of temporality he believes that

> the basic problem of the Philosophy of Symbolic Forms lies precisely in that territory which Heidegger expressly and intentionally excluded from the first volume of [*Being and Time*]. […] The Philosophy of Symbolic Forms does not question this temporality which Heidegger discloses as the ultimate foundation of existentiality and attempts to explain in its diverse factors. But our inquiry begins *beyond* this sphere, at precisely the point where a transition is effected from this existential temporality to the *form* of time. It aspires to show the conditions under which this form is possible, the conditions for the postulation of a 'being' which goes beyond the existentiality of 'being-there'. (PSF3, p. 163, n. 3)

Cassirer's starting point is not pre- or non-discursive Dasein, but, as noted above, the 'fact of culture' in its essential pluriformity; Dasein as fundamentally and constitutively an *animal symbolicum*.[15] For the Heidegger of *Being and Time*, the possibility of authentic being lies in recognising Dasein's *Geworfenheit*, its being-towards-death; the sorts of cultural forms in which Cassirer is interested tend to be treated as a fictive tissue veiling Dasein's essence. For Cassirer, by contrast, cultural form is no degenerate mode of being; it is that in which our collective being is revealed to and for itself.

In order to show the very real, quotidian sense in which symbolic capacity is, firstly, constitutive of our human being, and, secondly, no shroud drawn around authentic being, Cassirer devotes some considerable space in *The Phenomenology of Knowledge* to developing a 'Pathology of Symbolic Consciousness' (PSF3, Pt. II, ch. 6). Drawing on case studies from empirical psychology, here Cassirer shows how Heideggerian existential being-there might persist undisturbed, even in the absence of basic symbolising capacities, as is found, for example, in aphasia and dyscalculia. The point for Cassirer is that a mode of being-there indicative of what we might call background mastery[16] might persist, even as persons are unable to function in the prospective or projective—that is, *futural*—fashion essential to symbolic functioning. Aphasic or dyscalculic persons are unable to forecast in particular symbolic domains or modes—the linguistic-conceptual forecasting, for example, necessary to write a story, poem, or, indeed, philosophical treatise (such as *Being and Time* or *The Philosophy of Symbolic Forms*); the logico-mathematical forecasting necessary to calculate the quantity of something *to be used*, or the time that *will be* necessary for completion of A *in time for* B.

Despite critical differences, Cassirer does not, as can be seen from the footnote quoted above, simply dismiss Heidegger, whose account of Dasein's temporality Cassirer recognises as an important advance from Bergsonism.[17] Bergson's signal contribution to the philosophy of time was to reveal the constitutive role played by memory (PSF3, p. 184), and therefore to locate the person as a genuine, productive centre of temporality. For Cassirer, however, Bergson's philosophy of time is incomplete, because 'he recognizes only the past as originally temporal': here, 'consciousness of the future does not belong to pure temporal intuition' (PSF3, p. 187); 'the way in which *durée* is *experienced* and scrutinized [by Bergson] does not correspond to [the future aspect] at all—for it is a return to the *past*, recollection' (PSF4, p. 209).[18] Here, then, is a critical difference between Bergson on the one side, and Heidegger and Cassirer on the other (see also PSF3, p. 189, n. 34). And yet, while Cassirer and Heidegger share a belief in the future aspect as essential to Dasein's temporality, they do not formulate future time in quite the same way.

Let us sketch Cassirer's temporal philosophy. With the ancient Greeks, it is the central paradox of time that it appears to be the unchanging medium of all worldly change: time itself must not change, for it is *in* time that life finds movement. Mythical thinking, says Cassirer, grasps time as 'no mere ideal network for the order of the "earlier" and "later"; rather it is itself the spinner of the net', the origin of 'all being' (PSF3, p. 164).[19] It is not until Augustine that 'a sharp dividing line is drawn between the time of things and the time of pure experience […] which by its very essence can be given to us only as present' (PSF3, p. 169). Subjective, experiential time after Augustine is composed of the interpenetrative persistence of memory, intuition, and expectation; time is now a tripartite unity given apperceptively in and as the present:

> There is a present of past things, a present of present things and a present of future things. The present of past things is called memory, the present of present things is called intuition, that of future things is called expectation. […] [T]he unitary consciousness of the 'now' encompasses three different basic directions […] To comprehend time is […] to understand how […] the intentions toward the now, toward the earlier, and toward the later […] are composed into the unity of meaning. (PSF3, p. 167)

It is, for Cassirer, in Augustine that the person is first formulated as a generative centre of a temporality to which the future is essential. Dasein's time, in Cassirer, is prophetic, taking form as a spiritual 'striving' towards a future (see also PSF4, pp. 128–131). Wherever there is symbolic form, there is *Geist*, both *in* time and producing—formalising—it in the several forms constitutive of our cultural history. Time, Cassirer writes, is

> not the merely external apprehension of a finished and ready form into which life has been squeezed but is the very way life gives itself form in order that in this act of form giving, this formative activity, it may understand itself. (PSF3, p. 190)

For the Heidegger of *Being and Time*, temporality is bound up in an attempt to move beyond the degenerate sign or symbol and to dig down, as it were, to originary temporality, and to capture the violent, momentary vision of authenticity. Dasein is constituted in and as its non-thematised being-there, a now shaped by its pressing continuously into this or that future. Dasein's futural orientation is characterised in *Being and Time* as Dasein '*coming towards*' itself (Heidegger, 1927, pp. 372/325). Here, 'futural' does not mean 'a "now" which has not yet become "actual" and which some time *will be* for the first time'. Rather, Heidegger imagines a 'coming in which Dasein, in its ownmost potentiality-for-Being, comes towards itself' (1927, pp. 373/325). The possibility of Dasein's being authentically comes only as a

'moment of vision', a moment in which one realises the enculturated nature of one's own day-to-day existence, and 'shatter[s] itself against death' (1927, 437/385)—that is, the symbolic death, the possibility of not or no longer being, say, a parent, builder, lawyer, student, teacher (see Blattner, 2004).

In Cassirer, by contrast, temporality cannot be separated from or purified of its modes of representation, and so the violence of authentic temporality, as that which breaks through the crust of convention, does not obtain. The symbol and our symbolising activities are themselves primordially temporal—in the dual sense that while time has no being beyond our symbolising it, our symbolising of time is itself temporal (has an historical movement). Time *is* the spinner of the net in mythical thinking; it *is* the originary cosmic movement and moment of genesis. At the dawn of language, temporality is largely effaced, for it is equated to and articulated in spatial terms (PSF1, pp. 215–226); but, as language becomes more and more aware of its own agency, it becomes the very voice of prophetic projection, the culminating moment being for Cassirer the lyric poetry of the Romantics (1925, pp. 97–99). In science and philosophy, physics has, since special relativity, further secured and widened the gap between physical and psychological time. In Cassirer, time cannot be comprehended apart from the mode of its symbolic constitution, and Heidegger can hardly escape this circle: his analytic of Dasein's temporality cannot be thought beyond or apart from his mytho-philosophical articulation of it.

It is worth noting that while the positions of Cassirer and the Heidegger of *Being and Time* are quite distinct, after *die Kehre* Heidegger's position is closer to Cassirer's. As Michael Wheeler puts it, for the later Heidegger the question is no longer 'What is the meaning of Being?' but 'How does Being essentially unfold?'. The answer: it does so in an historical, time-bound manner (Wheeler, 2011/2016, §3.2). We have seen that the position to which Cassirer remained consistent is one in which human *Geist* forever *dwells* in its symbols and symbolising activities, while in *Being and Time* authentic being is realised only momentarily, when Dasein can shatter the distorting lens of cultural-symbolic convention and '*take over its own thrownness*' (Heidegger, 1927, pp. 437/385). From the mid-1930s on, however, in such pieces as 'The Origin of the Work of Art' (1960),[20] 'Language' (1959), and '… Poetically Man Dwells …' (1954), we find being and truth, and the truth of being, instantiated, unconcealed in the event of art and *poiesis*: art, we are told, 'happens', and when it does it is historical in the sense of rupture, of grounding a new moment in human being and becoming (1960, p. 77). Poetry, the later Heidegger declaims, is 'projective saying', a moment of rupture and renewal in language which, 'in preparing the sayable, simultaneously brings the unsayable as such into the world' (1960, p. 74); it is, we are told, the originary form of and 'basic capacity for human dwelling' (1954, p. 228).

To find authentic being not beyond but in our symbolic activities: this has been Cassirer's position all along. What is striking, however, is that in Cassirer's expanded phenomenology of knowledge, myth, poetry, and science are ranged alongside one another. No one mode of thought carves nature more closely at the joints, for 'every feature of our human experience has a claim to reality' (EM, p. 77), because the symbolic forms organise the world(s) of human being differently, according to their own internal logic. There is in Cassirer an evolutionary, diachronic movement in our symbolic history; yet once the several forms have emerged, they persist synchronically.

Conclusion: Cassirer and educational discourse

It will be clear that Cassirer's conception of knowledge and his architectonic of symbolic forms repudiate the building-blocks picture critiqued. To conclude, I will bring the foregoing comments more concretely into the realm of education, through a brief consideration of two subjects typically opposed to one another: English literature and mathematics.

English

To teach and learn a subject is, Robert Eaglestone has claimed recently, to teach and learn 'an identity, a way to be. Maths teaches students to be mathematicians, history teaches them to be historians. […] But what', he asks, 'do we teach our students to be when we teach them literature? Possibly not "Englishers"' (2016, p. 4). Eaglestone's answer, that we teach students to be literary critics, is perfectly true—with respect to the teaching of literary criticism. But although literary criticism has become the paradigm form of 'doing' English literature, it is not necessarily the only way. Certainly, it is not the first way, for surely this necessarily was (and is) the production of literature. At pre-university levels of education, a diluted form of literary criticism is by now the well established means of testing so-called 'comprehension' (of the sort critiqued above). Following Cassirer—for whom the literary imagination is every bit as productive of knowledge proper as the scientific—we might consider and question the fact that the prevalent mode by which comprehension is tested educates students away from the symbolising activity of—in the broad sense of *poiesis*—the poetic imagination; we might rethink the aims of teaching literature, not as the teaching of 'comprehension', the ability to recite and equate a writer's words, but as the development and understanding of literary imaginations, and the ability to inferentially articulate this or that worldview with one's own.[21] In a Cassirean spirit, one would study the Romantics, say, not in order to test comprehension (as recitation and equation), but in order to understand and come critically to grips with the Romantic worldview (not, of course, the monochrome, monocular outlook such a turn of phrase suggests; not *a* worldview, but many), and, in so doing, perhaps to adjust one's own. Keats's 'Ode on Melancholy' (2005) and Shelley's 'Ode to the West Wind' (2005), for example, would now be understood as embodying objective knowledge, to the extent that both are original articulations of the ethical texture of life: of the logical, *a priori* structure of emotional experience (Keats); of the ethical tension between aesthetic and political life (Shelley). In Cassirer, such speculative, prophetic work is fully deserving of the designation 'knowledge', for in such works the poet, working within the context of a shared language, gives to that language 'not only a new turn but also a new life' (EM, p. 226). The same cannot be said, in general, for the teaching and learning of literature in England's schools: witness not only the scope and scale of the new GCSE in English Literature, outlined above, but also the demise of the A-level in Creative Writing.[22]

Mathematics

'It is now clear', states a recent OECD report, 'that students' mastery of mathematics must include the capacity to formulate problems mathematically and interpret results […] [T]hey must learn how to formulate and interpret [mathematical] concepts and tasks' (OECD, 2014, p. 254). Here, the problem of mathematics is presented as a problem of symbolic form, or,

perhaps, of learning to speak the language of mathematics. Such a view underpins the so-called 'South Asian' and Mathematics Mastery approaches to mathematics education, and stands in marked contrast to Gibb's defence, in his Durham speech, of 'memorisation of times tables and basic arithmetic at an early age' (2016a) (this, despite the government's support of mastery approaches[23]). While there is some early evidence to suggest that a mastery approach does lead to small yet statistically significant improvements in students' progress and attainment, social and ethical concerns have been raised against overly strict adherence to the mastery system; and it is not clear whether the approach has any impact on the so-called 'attainment gap' between socioeconomically advantaged and disadvantaged students in England.[24] My interest here, however, is in the recognition of mathematics as a symbolic form, fluency in which involves more than familiarity with set processes and procedures, or with recitation of lists of propositions (the times tables); it requires the ability to, as Cassirer might have put it, prospectively frame problems in mathematical-symbolic terms, and to develop to a high level of fluency those abilities which are most basically and starkly absent in dyscalculic persons.

Coda

Each of the symbolic forms, says Cassirer, 'opens a new horizon and shows us a new aspect of humanity' (EM, p. 228). If one of the purposes of education is the acquisition and development of knowledge, then a Cassirean perspective would surely see knowledge as expressive and projective—rather than as reflective, as simply a copy—in a dual sense: our symbolising activities may be prospective—where we frame and forecast in particular symbolic domains; speak, as it were, the language of mathematics, science, history—and prophetic—where we come to view the world, or an aspect of it, anew in light of, say, Romantic accounts of the generative power of the imagination, or quantum mechanics. Knowledge proper should be modelled neither as so many tokens to be collected and stored, nor foundation stones to be laid. Knowledge resides at the level of persons, but must, in principle, be communicable. Thus the critical importance in Cassirer of multiple forms of expression, symbolic organisation, and the prospective or futural orientation central to his philosophy of time: without communication, which presupposes some social setting or context, no shared or 'common' knowledge; without some form of expression, how can we say of any individual that knowledge, skill, understanding have been demonstrated? The Kantian in Cassirer never gives up the role that our creative faculties, operating in unity with one another, have in shaping the phenomenal world (see EM, p. 70): there is, for him, no gap nor contradiction between form of expression and knowledge. Cassirer penetrates the crude scientism—which has very little to do with the scientific imagination proper—of much educational thought by reminding us, firstly, that the sciences are part of, not apart from, human culture and its history (the objective knowledge produced by science is hardly immune to change or revision); and, secondly, that mathematics and the sciences offer not a 'truer' or more 'real' account of things in themselves, but one that is more general and performs a different sort of work to other modes of knowledge. 'In our scientific concepts', he writes,

> we reduce the difference between two colors, let us say red and blue, to a numeric difference. But it is a very inadequate way of speaking if we declare number to be more real than color. What is really meant is that it is more general. […] [T]o hypostasize number as did the Pythagoreans […] is a metaphysical fallacy. (EM, p. 77)

Cassirer reminds us that the unity of human cultural life consists precisely in its pluralism and its diversity, and that knowledge exists only in expression. Cassirer's architectonic of knowledge as symbolic form speaks to a number of educational concerns, ones that are being urgently felt in England but which are not England's alone.[25] Indeed, he offers a philosophically detailed and systematic account of knowledge that some later educational theorists will take for granted. Harold Rosen's view of knowledge in narrow relation to the study of English, for example—'knowledge to be made not given; knowledge comprising more than can be discursively stated; learning as a diverse range of processes, including affective ones'[26]—accords with Cassirer's view of knowledge in general. While such a view of knowledge as the one I have been pressing has shaped at least one formal response to the current national curriculum in England,[27] educational policy in England remains, for now, curiously immune to the force of such insight as Cassirer's. For those of us who find this disturbing, it behoves us to have a rich variety of philosophically sound counterarguments, for, as I claimed at the start of this piece, there is no philosophy-free educational belief or policy, though there is plenty that leaves its own philosophical presuppositions unexamined.

Concluding her article on Cassirer and the educational value of art, Bayer (2006, p. 2) writes that

> Art is a process in which the self confronts the inner world of subjectivity and forms it as an object accessible in the distinctively human world of culture. Cassirer's approach suggests that a philosophy of art cannot be self-grounded but that any philosophical comprehension of art, any aesthetic theory, ultimately requires grounding in a full philosophy of human culture.

In closing, I would add simply: as for art—or, in Rosen's example, English—education particularly, so for education generally.

Notes

1. In English, Cassirer is the most widely translated of the neo-Kantians (see Luft, 2015). For more detailed biographical information than is offered here, see Friedman (2000, 2016), Jensen (a, b), and Skidelsky (2008).
2. See the journal of that name (see References).
3. See Friedman (2000), Gordon (2010), and Skidelsky (2008); see also Luft (2015, pp. 477–478).
4. Eisner (2005) and Holbrook (1977) mention Cassirer, but not at length. The most substantial contributions on Cassirer and education are Bayer's (2000, 2001–2002, 2006).
5. Compare this, from Cassirer (1943, 215), with Cassirer (EM, p. 228). Despite Cassirer's short lecture on art and education, he does not offer any theory of education (see Bayer, 2006).
6. See, for example, Gove (2009, 2013) and his endorsement of, among others, Christodoulou (2014), Gibb (2016a), and Morgan (2014). Hirsch (1988) is a common reference point: see Simons and Porter (2015) and Gibb's and Christodoulou's contributions.
7. *Ibid*. Hirsch is often cited by Gove. For an early mention, see Gove (2009).
8. For a critique of the discourse of skills, as well as the false dichotomising of knowledge and skills, see Christodoulou (2014, ch. 5, *passim*); see also [self-identifying references]. For a statement of Christodoulou's 'building-blocks' view of knowledge, see her introduction and first chapter. AQ2
9. On rule-following, propositionality, and expertise, see Dreyfus (2013, 2014) and the debate between him and MacDowell (1994, 2013).
10. Such habits persist in the academy; see, for example, Lum (2015).
11. For arguments against the distinction between knowledge and skills, see [self-identifying reference]. AQ3
12. On this see Friedman (2016).
13. On the Davos Debate, see Friedman (2000), Gordon (2010), Luft (2015, pp. 477–478), and Skidelsky (2008); see also Nirenberg's (2011) review of Gordon.

14. PSF3, p. 149, n. 4, p. 163, n. 2, p. 167, n. 8, p. 173, n. 16, p. 189, n. 34.
15. Cassirer, EM (p. 26) (see also PSF1, pp. 69–72; RKG, pp. 18–25; Friedman, 2000, p. 127).
16. On the issue of background mastery and expertise in a Heideggerian key, see Dreyfus (2014), and the Dreyfus–MacDowell exchange (and other contributions, especially Pippin [2013]) in Schear (2013). Also germane is the discourse on tacit knowledge: for a carefully worked-through account, with which I nevertheless find myself in some disagreement, see Gascoigne and Thornton (2013); see also [self-identifying reference]. AQ4
17. For a fuller sense of Cassirer's disagreement with Heidegger, see PSF4, pp. 200–209.
18. Cassirer's judgement of Bergson is even-handed and quite right. Compare Cassirer's comments with Bergson (1896, pp. 138, 151–152).
19. See, for example, Ovid's *Metamorphoses* and Parmenides. Ovid (2010, pp. ii.6–10): 'Before the sea and lands had been created, | before the sky that covers everything, | Nature displayed a single aspect only | throughout the cosmos; Chaos was its name, | a shapeless, unwrought mass of inert bulk | and nothing more, with the discordant seeds |of disconnected elements all heaped | together in anarchic disarray'. Parmenides (F8, ll. 19–22, in Waterfield, 2000): 'how could what-is be hereafter? How could it have been? | If it came to be, it is not, and likewise if it will be some time in the future. | Thus birth has been extinguished and perishing made inconceivable. | Nor can it be divided, since all alike it is'.
20. 'The Origin of the Work of Art' was first delivered as a lecture in 1935 (Heidegger, 1975, p. xxiii).
21. Here, I think some interesting connections might be made between Cassirer and Brandom (2000). In very different ways, both see the job of philosophy as a certain form of explication. This thread cannot be followed here, however.
22. See [Self-identifying reference.] AQ5
23. Announcing a tranche of government funding for a south-Asian-inspired approach to mathematics education, Gibb attempted to reconcile rote and mastery learning (see DfE, 2016; Gibb, 2016b).
24. On the impact of Mathematics Mastery, see Jerrim and Vignoles (2015), and the Education Endowment Foundation's summary. On attainment gaps in England and China, see Jerrim (2017); also see Jerrim and Wyness (2016), Low (2017), and OECD (2014). For overviews and a sense of concerns over the mastery approach, see Boylan (2016), Low (2017), the Mathematics Mastery website, Merttens (2015), and Weale (2015).
25. Bayer's and Eisner's contexts are American, for example.
26. Here, Rosen is quoting from Peter Medway (1980) (Rosen, 2017, p. 86).
27. See Richmond/UKLA's (2016) and Richmond et al.'s (2017a, 2017b) proposal for an alternative curriculum. Richmond is the editor of Rosen (2017). While neither as radical nor as strident as Rosen's writings, the proposed alternative curriculum does place greater emphasis on students as producers.

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